

Information has been received through Mrs. Cockerell that the British Museum of Natural History is putting up a plaque to the memory of Professor Cockerell: "world famous naturalist, humanitarian and teacher." His father first took him to the museum when he was a small boy and he has since given specimens of insects and much valuable help to increase the collections and library of that great museum.—E. O. ESSIG, *University of California, Berkeley*.

LIST OF BIOGRAPHIES

- ESSIG, E. O. 1931. Theodore Dru Alison Cockerell. History of Entomology. Macmillan, N. Y. pp. 570-573. Portrait.
- CATTELL, J. M. and J. CATTELL. 1938. American Men of Science. Science Press. N. Y. City, p. 226. Name starred.
- TAFT, R. 1945. Professor T. D. A. Cockerell. "The Editor's Page." Transactions Kansas Acad. Sciences. June, pp. 42-43, photo Prof. and Mrs. Cockerell.
- REMINGTON, CHARLES. 1948. Theodore Dru Alison Cockerell (1866-1948). The Lepidopterists' News. II (2) p. 14, photo.
- ROHWER, S. A. 1948. Theodore Dru Alison Cockerell. Proc. Ent. Soc. Washington, 50 (4), pp. 103-108, photo.
- LEVECQUE, NORMA. 1948. An appreciation of Dr. T. D. A. Cockerell. Relief. (No date or place of publication indicated).
- RAYMENT, TARLETON. 1948. The soul of a man of science. The Victorian Naturalist. 64 (11) : 225-226.
- JAEGER, EDMUND C. 1948. In Memoriam. Theodore Dru Alison Cockerell. Palm Springs Desert Museum. Third Ann. Report for 1947, pp. 30-31. Portrait of Dr. and Mrs. Cockerell.

THE SUITABILITY OF INSECT-CONDITIONED PLANT TISSUES AS HABITATS FOR SUCCESSIVE INSECT SPECIES

BY RICHARD L. DOUTT¹

Division of Biological Control, University of California

A phytophagous insect may alter its host in such a manner as to make it particularly suitable for later invasion by another insect species. Examples of such ecological succession are numerous in

¹Junior Entomologist in the Experiment Station.

entomological literature and are especially important considerations in the field of forest entomology. Recent field observations have disclosed two further cases of this type of insect succession which are herein described.

During April, 1947, large numbers of a cicada, *Platypedia* sp., were present in an apple orchard near Sebastopol, California. The characteristic scars on the apple twigs resulting from cicada oviposition were abundant by May 9. On May 22 it was noticed that these scars were providing excellent colony sites for the migrating immature forms of the woolly apple aphid, *Eriosoma lanigerum* (Hausm.). Several of these incipient aphid colonies were tagged and observed throughout the summer season. Although the activities of predaceous coccinellids and syrphids reduced the number of aphids, many of these scar-site colonies persisted through the season. During the winter months they served as hold-over foci from which aphids could disperse in the spring. If this succession is of regular seasonal occurrence it could have economic implications.

Another interesting case of an ecological succession was found during a survey of hymenopterous parasites of the gelechiid, *Gnorimoschema baccharisella* Busck, which forms large oval stem-galls on *Baccharis pilularis consanguinea* Kuntze. The moth vacates the gall through a single small exit hole, and it is through this opening that the gall is often later invaded by crawlers of the black scale, *Saissetia oleae* (Bern.). These crawlers settle on the walls of the gall cavity and are frequently attended by the argentine ant, *Iridomyrmex humilis* Mayr. The scales are protected from their natural enemies by the ants and by the inaccessibility of their feeding site. Occasionally the galls will be invaded by immature mealybugs instead of the black scale crawlers. This has been briefly mentioned by Gillogly (1940) who reports a *Pseudococcus* sp. occurring in *Baccharis* galls formed by other insects. These mealybugs mature, become gravid, and oviposit within the galls for they are protected from their natural enemies by the same factors which shield the scale insects.

LITERATURE CITED

- Baccharis pilularis*. Unpublished M. S. Thesis, Univ. of Calif.
GILLOGLY, L. R. 1940. A study of the insects associated with